

BRIEFER ARTICLES.

Curious case of variation in Calla.—A strange and rather remarkable case of variation in the flower structure of this familiar plant recently came to my notice through the kindness of a local florist, who called my attention to it, and upon my observation of its rarity gave it to me for such use as I chose to make of it.

It presented a well marked example of "double flower" in every essential respect. The flower structure of the Calla is so well known that no special description is necessary. The plant itself was perfectly normal to all appearance, save the flower, including care and environment. The stalk upon which this particular flower was borne was not appreciably larger than ordinary. In short, there was nothing to indicate the possibility of the monstrosity prior to its appearance. Yet there it was, a perfectly "double calla," in a very literal sense; for the "double" feature extended to spadix as well as spathe. The only appreciable difference in the parts was in size. The outer and normal flower was very large and fine; the inner was pure in color and texture, but was less than half the ordinary size. This difference was likewise true as to the spadixes, which varied in about the same way, save that they were partially fused together, while the former were wholly distinct.

Such, in brief, is a general statement of the facts. Monstrosity is not an unusual thing in nature, especially under the influence of domestication; but a glance at the literature of the subject, though limited, seems to indicate that this is a rather rare case. According to Professor Gray, indeed most botanists, flowers are to be considered as the morphological counterparts of leaves modified in such way as to conserve the ends of reproduction. The calla has been considered as a striking example of such modification, the transition being so gradual as to be appreciable by even the ordinary observer, there being no floral envelopes save the single, large, modified leaf, in which the original shape is but little changed.

When variations of these envelopes occur they usually show a disposition to revert to primitive conditions, "retrograde metamorphosis," or to go on to multiply after the forms of foliage, "proliferation." There are many examples of these among flowering plants; but neither seems to cover the case under consideration, unless it be that of proliferation in disguise. Again quoting Prof. Gray: "In the application of morphological ideas to the elucidation of the flower, nothing should be assumed in regard to it which has not its counterpart and exemplar in the leaves and axis of vegetation." (Structural Botany, p. 174, vol. I—sixth edition.) Does the case under consideration not force us to regard some flower structures as at least partial exceptions to the general laws of variation? Unless it may be regarded as a case of proliferation in disguise, which seems open to doubt, then there seems really no alternative except to

consider it an illustration of the theory of "saltation," proposed to cover cases of a similar sort in zoölogy.

Not being a specialist in botany, I submit the case, and have reluctantly suggested the above reflections in the most tentative way. If they may awake an interest on the part of those more capable of opinions, this notice will not have been in vain.—C. W. HARGITT, *Miami University Oxford, Ohio.*

Poisonous plants and the symptoms they produce.—When horses, cattle or sheep here die from unknown causes, which have produced more or less marked cerebral disturbance within a few days or hours before dissolution, accompanied by one or more minor symptoms, they are said to have been "locoed," that is, poisoned by some usually mysterious unknown plant. The general symptoms are here given in the order they usually appear:

The animal wanders alone, has unnaturally bright eyes and slight frothing at the mouth, or even extreme salivation occurs and the creature goes about with a stream of clear saliva trickling from its chin to the ground, or else the lips are dry, a little swollen and the whole mouth very hot. The appetite becomes noticeably impaired; large quantities of offensive gas are belched forth, frequently accompanied by a greenish froth mixed with finely chewed food. The brain now becomes plainly affected—control of limbs partially or wholly lost—sometimes muscles of one side of the neck are contracted in a pitiable manner. In a few days, hours or minutes, as the case may be, after proper limb-control is lost, the staggering animal refuses to eat or drink at all, becomes stupid, reels and falls, seldom rising again. Stupor increases, eyes become dull and staring, perfect torpor comes on. Limbs and neck may become quite rigid and extended, or else in natural position and easily moved by the hand. Abdomen usually swells to enormous size. Victim may lie in this condition a week or death may ensue in a few hours; there is rarely any struggle at that time.

Post mortem examination reveals several interesting features. The intestines with their surrounding fat are already green, although the creature may have only just died. The arteries and smaller vessels in the limbs are gorged with thick, black blood. The lining of the first stomach is worn and ulcerated in patches and in some cases seems to have commenced decomposition; is very soft and can be peeled off the muscular layer with thumb and forefinger in big pieces. Lungs and heart almost bloodless, but the brain, particularly the cerebellum, is purplish, soft and pulpy.

The symptoms, etc., vary considerably, and it seems unlikely that one poison causes them all.

Four common plants are here said to "loco" stock, viz.: *Oxytropis Lambertii*, *Leucocrinum montanum*, *Fritillaria pudica* and *Zygadenus elegans*. The first is now known to produce no evil effects except when